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VOL. XX JULY 1, 1937 NO. 1

NAUPACTUS LEUCOLOMA *(Coleoptera, Curculionidae)*

A Pest New to the United States

About a year ago County Agent Nelson in Okaloosa County, Florida, sent to the Experiment Station some grubs which were troubling cotton and peanuts in his county. In July of last year he sent in the adult weevils. These were submitted to the National Museum for identification and were identified by L. L. Buchanan as *Naupactus leucoloma* Boh., an insect not heretofore reported from the United States, although known in South America. County Agent M. Wilkins had previously sent in from Walton County grubs which were probably of this species tho mistaken at the time for those of the vegetable weevil.

Fig. 1.—*Naupactus leuceloma* Boh. (Drawing by J. W. Wilson.)

In May of this year the writer, accompanied by Mr. U. C. Loftin of the U. S. Bureau of Entomology, visited the infested territory and found the grubs doing severe damage. On one farm they had destroyed approximately a third of the stand of cotton and fully half of that of corn and a considerable percentage of the stands of velvet beans and peanuts. In many

cases there were gaps in the cotton rows as much as ten or twelve feet long. Scratching away the soil in these gaps invariably disclosed the grubs. Wilting or dead plants throughout the field also indicated their presence. When these dead or dying plants were dug up anywhere from one to five of the grubs would be found at their base.

The grubs are not strictly root feeders but feed rather on the portions of the stems underground. They gouge out large cavities in these stems, which, of course, results in the death of the plants.

The insect apparently is a very general feeder, as the four crops on which they were found, corn, velvet beans, peanuts and cotton, are the chief crops in that section. It has been found that in captivity they will readily attack beans and doubtless would do so in the field.

According to Mr. H. C. Young of the Bureau of Entomology and Plant Quarantine, who has visited the section since the writer's visit, the damage done is now much more severe. Practically all crops in the infested fields and many weeds, especially the so-called "Mexican Clover" (Richardia) are attacked.

According to Mr. Wilkins the adults began to appear about June 15. They have never been observed to fly but are crawling over the fields in immense numbers. He states that a ditch with perpendicular sides makes an effective barrier and gives a hint as to a possible control measure.

The fact that the adults do not fly will doubtless retard their spread but probably increases the danger of their being transported to considerable distances by automobiles and trucks.

The infested areas at the present time would seem to be quite limited. They are found over a radius of only about two miles in the northern part of Okaloosa County, Florida, and, according to Mr. Wilkins, one farm in Walton County, and adjoining portions of Alabama. The County Agent, Mr. Nelson, states he does not find it in other parts of the county and no complaints have been received from other parts of the state.

Another hint of a possible control measure is that a field stated by the County Agent to have been heavily infested last year but pastured during the winter and spring to hogs was comparatively free of weevils at the time of our visit. But in the infested area it is proving a very severe pest and a decided threat to general farming. Several share croppers have become so discouraged as to abandon their farms after working all

spring to raise a crop. So far no crop generally raised in this section has been found to be immune. The Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, is stationing an entomologist at Florala to study the pest.

Since there was no sign of adults until June 15 and none were noted last year until July, it seems quite certain that there is but one brood per year. In what stage they spend the late fall and winter is not known, but larvae of many sizes were found in the field, indicating that egg laying must extend over a considerable length of time and that the larvae are of quite diverse ages.

The insect is a native of Argentina, Chili, and Uruguay and has recently been introduced into New South Wales, Australia (Rev. App. Ent., Vol. 21, p. 303) where it was "attacking the roots of lucerne."

The adult weevil is seven-sixteenths of an inch in length and about five thirty-seconds of an inch across the abdomen. The color is dark gray with a lighter band along the margins of the elatra (not shown in the drawing), and two paler longitudinal lines on each side of the thorax and head (one above and one below the eye). The body is densely covered with pale hairs which are especially long on the elatra.

J. R. WATSON.

A SERICOTHRIPS WITH AN UNUSUAL HABITAT

J. R. WATSON

On April 4, 1936, Dr. A. N. Tissot collected from the leaves of *Nymphaea macrophylla* in Lochloosa Lake, Florida, a number of specimens of a *Sericothrips*. On May 16th he collected a larger series from the same host in Orange Lake. He states that he could have collected many hundreds. The plants over a large area showed the effects of their feeding, characteristic thrips marks on their leaves. A comparison of the insects with Moulton's description of *S. langei* (Bull. Brooklyn Ent. Soc. XXIV, No. 2, 4, pp. 230-231, Oct. 1929) convinced the writer that they were closely related to that species but they consistently differed in certain characters, especially the bands on the wings. These differences seem to warrant a varietal name, a conclusion agreed to by Professor Moulton to whom specimens were sent.

The three females on which Moulton based the species were

collected "by sweeping" at Fish Lake, Illinois. This habitat suggests that *S. langei* may have a similar host.

Female—Sericothrips langei var. **tissoti** n. var.

Color of head, prothorax and sides of abdomen dark brown (Old English Brown, Merz & Paul Dict. of Color, Plate 8, E, 12), abdominal segments 9 and 10 and middles of segments 1-6 somewhat lighter and pterothorax yellowish (Powdered Gold, Plate 12, I, 6). Antennae much lighter; segment 2-5 light yellowish brown (India Buff), segment one, 6-8, and tip of 5 light brown. All femora brown with light yellow bases, a u-shaped area at apex of middle pair also yellow. All tibiae brown in proximal half, yellow in apical. Tarsi yellow except tip of basal segment and base of apical segment which are dark brown. Wings clear at base and apex with *one* brown band in second quarter. Ocellar crescents *reddish* brown.

Total body length .97 to 1.3 mm.; head length .09 mm.; greatest width (across eyes) .15 mm.; prothorax, length .12 mm.; width .19 mm.; abdomen, width .25 mm. Segments of antennae: length (width), I, 22 (29); II, 35 (29); III, 44 (19); IV, 36 (19); V, 34 (18); VI, 44 (19); VII, 15 (7); VIII, 14 (5) microns; total length .247 mm. Length of spines: interocellars 18, on posterior angles of prothorax 32, of abdominal segment nine 56, of abdominal segment ten 60 microns.

Head, 1.5 times wider than long, usually considerably retracted into prothorax; cheeks straight and parallel with a few short spines; dorsum densely and heavily striated. Postocular bristles short, less than half as long as the width of the eyes. Eyes large and conspicuously bulging, with large facets. Mouth cone reaching nearly across the prosternum.

Prothorax densely and deeply striated like the head. Spines as in the species.

From eighteen to twenty-four spines on the fore vein and one near tip where hind vein would appear; except about six dark brown ones in the shaded portion of the wing, all very pale and inconspicuous.

Microscopic setae apparently entirely absent in the center of abdominal segments 1-7.

Male—very similar to the female in color. Antennae somewhat lighter especially segments 2 and 6-8. Yellow bases of femora not as conspicuous as in the female.

Total body length .85 mm. (.77 to .94); head, length .08 mm., width across eyes .15 mm.; prothorax, length .12 mm., width .19 mm.; pterothorax, width .23 mm.; abdomen, width .19 mm. Antennal segments, length (width); I, 19(23); II, 28(26); III, 44(17); IV, 37(19); V, 38(16); VI, 47(18); VII, 9(7); VIII, 12(5) microns. Total length .22 mm.

Nineteen spines on the anterior vein. The one situated where the posterior vein would be absent in some specimens.

Nymphs—Color, pale yellow, head and thorax tinged with brown. Fourth segment of antennae tinged with brown. Eyes black.

The most conspicuous difference between this variety and *langei* is the single dark band across the wings. In none of the females is there any trace of the more apical band. In about half the males, however, there is a trace,—a small clouded area and one dark spine on the anterior vein, but in no case is there a complete dark band.

Described from 26 females and 22 males.

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DOROTHY CLARA SHULTZ GOFF

Dorothy Clara Shultz Goff was born on September 5, 1907, at Colfax, Illinois, daughter of Dr. and Mrs. Charles E. Shultz. She attended the Colfax public school, but soon after the family moved to a farm near Shirley, Illinois, and she then attended the Benjamin F. Funk School and its associated high school. During the World War the family moved to Bloomington, Illinois, and she attended the Franklin Elementary School there, returning to the country when the war ended. During her last two years of high school, Mrs. Goff attended the University High School connected with the Illinois State Normal University at Normal, Illinois, graduating in 1924.

The succeeding autumn she entered Illinois Wesleyan University at Bloomington, Illinois, and spent two years there, electing to study a scientific course. During an interim of two years she worked as laboratory and X-ray technician in the clinic of Dr. E. P. Sloan of Bloomington, but in 1928 she entered the University of Illinois, graduating from there in 1930 with a Bachelor of Science degree.

On August 1, 1930, she married Carlos Goff, Assistant Entomologist, of the Florida Agricultural Experiment Station at Leesburg. In his work Mrs. Goff had a great and practical interest. Both she and Mr. Goff attended the University of Michigan during the year 1934-35, where she received her Master of Science degree. After they had spent the following summer at the Biological Station, Douglas Lake, Michigan, they returned to their work in Florida, living for a time at Braden-

ton, Florida, but returning in 1936 to Leesburg. It was here, on January 17, 1937, that soon after the birth of a baby son, she died of an embolism. She was 29 years old.

Mrs. Goff's chief interest was in Parasitology. She had not published anything in this field but was building up a collection of Trematodes to work on later. She was interested in her husband's work on Peromyscus and worked out jointly with him much unpublished material on these mice. They published jointly a couple of short papers on the incubation of turtle eggs. She became a member of Phi Sigma while at the University of Michigan.

SUGAR CANE MEALYBUG CONTROL ON SEED CANE, WITH SPECIAL REFERENCE TO COLD WATER TREATMENT, AT THE NORTH FLORIDA EXPERIMENT STATION

A general infestation of mealybugs (*Pseudococcus calceolariae* Mask.) on all varieties of sugar cane was noted at the North Florida Experiment Station in September, 1934. Infestation was relatively heavy especially on those varieties whose leaf sheaths clung tightly to the stalk. Damage to growth and survival of certain varieties seemed to be impending, therefore a clean-up program was initiated. Out of the 1170 varieties under observation 80 were selected for yield trials and were windrowed in November, 1934. When removed from the windrow on the third of March, 1935, an abundance of mealybugs were noted. The canes were clean stripped and submerged for 25 minutes in a tank containing a .25% solution of nicotine sulphate at 65°F. plus a soap spreader. Each variety was treated and planted immediately in a field one-fourth mile from infested cane. In September, 1935, a more or less general infestation of mealybugs were found throughout the one acre planting.

The following month 22 varieties were selected for increase and further testing and were clean stripped and topped and left standing in the field for three days. Exposure to sun apparently reduced the population of mealybugs considerably. The canes were then cut and removed to shelter. Further treatments and results obtained were as follows:

1. Part of each variety was carefully washed with brushes in a soap solution and submerged for thirty minutes in tanks containing a 5% solution of lethane 420 plus lethane spreader. The cane was then removed

from the tanks and carried directly to a mealybug free field some distance from infested cane and planted. The two acres of cane thus treated were comparatively free of mealybugs in November, 1936. However, a few foci of infestation were found and with the mealybugs overwintering on the stubble it seems likely the insect will spread into a general infestation.

2. A small amount of each of nine varieties was submerged in the lethane solution for 12 hours. This was planted one-fourth mile from other cane. With the exception of two varieties this planting came to a reasonably good stand and made an excellent growth. When clean stripped in November, 1936, no mealybugs were found.

3. The remaining clean stripped cane was windrowed in November, 1935. When removed from the windrow on February 24, 1936, quite a few bugs were noted, though not so many as were previously found on unstripped cane. Each of nine varieties were tied in convenient size bundles and completely submerged in an artificial lake through which a considerable stream of clear spring water was flowing. After 7 days all cane was removed from the lake except one bundle of each of three varieties which remained submerged for 21 days. Immediately after removal from the lake the canes were planted in double strands in a Norfolk sandy loam soil one-half mile from other cane plantings. Canes submerged for 7 days came to a reasonably good stand. Considering excessive handling with resultant destruction of eyes it appears doubtful whether the treatment impaired germination to any extent. The entire one-fourth acre planting made an excellent growth of cane which was found to be entirely free of mealybugs when clean stripped in November, 1936.

Canes submerged for 21 days came to a broken stand. This was likewise partly due to inferior planting material. Only a 75 ft. section of row was planted from this treatment, therefore the observation is limited. The canes made an excellent growth and were free of mealybugs.

From this limited trial for only one year the cold water treatment appears to be effective and is economically feasible. The experiment is being continued and further observations will be made.

J. D. WARNER.

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A NEW *Trichothrips (Haplothrips)* FROM ALABAMA
(*Trichothrips asymmetricus* n. sp.)

J. R. WATSON

Female. Color dark brown, legs lighter, especially on thinner margins; tarsi yellow, fore tibiae and fore femora mostly yellow tinged with brown on outer margins. Antennal segments I and II yellow, II clouded with brown on inner margin, III light brown, yellowish at apex and base, IV-VIII darker brown.

Fig 2.—*Trichothrips asymetricus* n. sp. (Drawn by Maxwell).

Head only a little longer than wide, cheeks nearly straight and converging slightly posteriorly. Mouth cone very widely rounded, about a third as wide as prothorax. Eyes rather small, finely faceted. Ocelli prominent, much larger than one of the facets of the eyes. Posterior pair anterior to the middle of the eyes. Postocular bristles long, situated at about a third of the distance between the posterior margin of the head and the posterior margin of the eye, but reaching nearly to the anterior margin of the eye. Antennae nearly twice as long as the head. Segment one conspicuously prolonged on the inner angles (Fig. 2), segment II markedly asymmetrical, bent sharply outward and wider than long, by far the widest segment; segment III with a single long sense cone on the outer angle, colorless as are the short bristles of the antennae, segment VIII sessile on VII.

Prothorax shorter than the head and, including coxae, over twice as wide as long. Fore tarsi unarmed. Pterothorax somewhat narrower than the prothorax. Wings rather short, membrane clouded with gray, deeper

in the apical third with a light brown area at the extreme base. Narrowly rounded at the tip, fringed with long hairs in the apical two-thirds or more but without interlocated bristles. Abdomen long and heavy. Bristles on segment IX pale but long, some extending well beyond the tube. Tube nearly as long as the head, sides nearly straight, terminal bristles nearly as long as the tube.

Measurements:—Total body length 2.1 mm. (some paratypes as short as 1.7 mm.). Head length .22 mm.: greatest width (immediately behind the eyes) .20 mm. Prothorax, length .18 mm., width (including coxae) .38 mm. Pterothorax, width .41 mm.; abdomen, greatest width .40 mm.; tube, length .20 mm., width at base .086 mm., at apex .044 mm. Antennal segments: length (width): I, 58(47), measured along the apical margin .52); II, 52(55); III, 68(40); IV, 63(44); V, 60(36); VI, 57(35); VII, 51 (26); VIII, 40(13) microns. Total antennal length .42 mm.

Bristles: postocular .08 mm.; on posterior angles of prothorax .13 mm.; on ninth abdominal segment .30 mm., terminal bristles of tube .15 mm.

Male:—Color similar to that of the female. Average size smaller. Fore tarsus unarmed; wings variable in length, in the type membrane reaching only to abdominal segment six, in some paratypes reaching the base of tube. Ninth abdominal segment narrow, often only half as wide as the eighth. Otherwise as in the female.

Measurements of type:—Total body length 2.0 mm. Head length, .22 mm., greatest width .187 mm. Prothorax, length .16 mm., width (including coxae) .41 mm. Pterothorax, width .41 mm.; abdomen, greatest width .37 mm.; tube, length .17 mm., width at base .08 mm., at apex .042 mm. Antennal segments: length (width): I, 61(47); II, 45(52); III, 63(35); IV, 56(40); V, 56(32); VI, 50(33); VII, 47(22); VIII, 28(14) microns. Total antennal length .36 mm.

Nymphs:—Color, straw yellow with much hypodermal pigment, purple by transmitted light, yellow by reflected. The antennae are peculiar and characteristic. In the largest nymphs (1.5 mm. in length) they are shorter than the head, 7-segmented, and all segments wider than long and progressively narrow apically. I shows a trace of the projection on the inner angle so marked in the adult.

Measurements:—Length (width): I, 23(47); II, 27(35); III, 24(28); IV, 21(24); V, 14(17); VI, 7(16); VII, 7(12). I concolorous with the head, II, a shade darker, III-VII, light brown. Mouth cone long and very widely rounded at apex as in the adult.

Prepupa 1.3 mm. long.

Described from 58 females and seven males collected from blossoms of *Ceanothus Americanus* and *Tephrosia Virginiana* near Birmingham, Alabama, June 6, 1933, by H. E. Bratley. The peculiar shape of the antennal segments I and II are characteristic.

A PRELIMINARY LIST OF THE TABANIDAE (DIPTERA) OF FLORIDA

By G. B. FAIRCHILD

(Continued from Vol. XIX, p. 63)

Tabanus sparus var. **milleri** Whit.

Miami; St. Augustine; St. Petersburg (4) (Types); Inverness, III-18, 24 (1); Ft. Myers, IV-17-16 C. P. Whitney; Gainesville; Monticello, IV-18 to V-14-35; Wacissa, VI-5-35; Port St. Joe, V-20-35. Typical *sparus* from New England has the eyes immaculate, Florida specimens seem always to have a single dark band, while according to Bequaert (1933) those from Staten Island may be of either type.

Tabanus stygius Say.

Georgiana, July (1); Monticello, V-27, 30-35.

Tabanus tener O. S.

Indian River (Type); Clearwater, IV-29; Ormond; Lake Mary, March; Palm Beach, III-16 (1); St. Petersburg, IV-10-14; Ft. Myers, IV-9-16; West Palm Beach, IV-9-15, all C. P. Whitney; Lake City, V-9-09; Greenville, IV-25-35; Monticello, IV-28 to VI-3-35.

Tabanus trijunctus Walk.

Very abundant, especially in the southern part of the state. St. Augustine, IV-20; Georgiana (1); Paradise Key, III-25-29; Deep Lake, V-27-34; Chokoloskee, IV-20-33; Sandy Key, Cape Sable, IV-28-33 W. J. Clench.

Tabanus trimaculatus P. de B.

Monticello, V-12, 13-35; Greenville, V-18-35.

Tabanus turbidus Wied.

Waldo; Orange Co., VI-25-29 M. M. Smith, Jr.; St. Cloud, IV-1933 (all in U. S. N. M.); Monticello, V-27 to VIII-27-35.

Tabanus vivax O. S.

Lloyd, V-12, 21, 28-35.

Tabanus wiedemanni O. S.

Enterprise, V-17-75; St. Augustine, V-19; Ormond (1); West Palm Beach, IV-4, 8-13, III-29-18 C. P. Whitney.

Tabanus pygmaeus Will.

"Florida" Williston (Type); Lloyd, VIII-22-35; Ft. Myers, VIII-11-30 R. H. Beamer (Univ. Kansas).

This little species differs strikingly from other species of Tabanus known to me in the three-segmented third antennal joint, two rather swollen annuli and a very broad and short basal portion. In addition, the frons is very broad, lacks a denuded frontal callus or ocelligerous tubercle, and the eyes are bare. In general appearance it resembles a small specimen of *T. sparus* Whit. In view of its structural peculiarities, it would seem advisable to remove it from the already unwieldy genus Tabanus and place it in a separate subgenus, which I propose to call *Microtabanus*.

Dr. Alan Stone writes me that it seems close to *Glaucops* Szil. and that he has specimens of another species from Gainesville, IX-26 to X-2.

Tabanus (Whitneyomyia) beatificus Whit.

"Fla." Geo. D. Hulst (Type); Gainesville, V-11-25 D. M. Bates; Monticello, IV-5-35 (ex larva).

In addition to the species listed above, there are a number of others which are, for various reasons, omitted in the present list. Two species of Tabanus and one of Chrysops are in process of publication, and another species of Tabanus and two of Chrysops are being held for further study. *T. fur* Will. is very probably a synonym of *T. fronto* O. S. *T. sulcifrons* Macq., *recedens* Walk., and *giganteus* DeGeer, have all been recorded from the state, as has *Goniops chrysocoma*, but in each case there is some doubt either as to the record or the determination.

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THYSANOPTERA OF THE GEENTON

J. R. WATSON

(Continued from Vol. XVIII, p. 62)

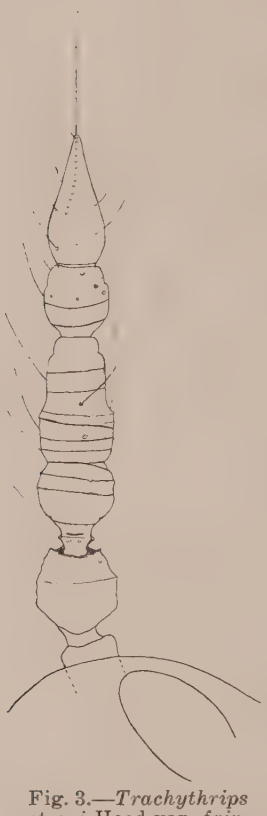

Fig. 3.—*Trachythrips watsoni* Hood var. *fairchildi* var. nov. (Dorsal view of right antenna, drawing by Maxwell).

Trichothrips bratleyi (continued)

Male.—Macropterous:—Very similar to macropterous female but hypodermal pigment heavier.

Total length 1.5 mm.; head, length .28 mm., width .23 mm.; prothorax, length .12 mm.; width, including coxae, .35 mm.; pterothorax, width .28 mm.; abdomen, greatest width .22 mm.; tube, length .18 mm.; width at base .08 mm., at apex .04 mm. Antennal segments, length (width) I, 46(38); II, 59(33); III, 86(35); IV, 80(35); V, 70(33); VI, 56(30); VII and VIII, 76(24) microns. Total antennal length .48 mm.

Ocelli present. Ocellar crescents dark reddish brown. Wings long, membrane reaching base of tube. Tarsal tooth stout, nearly as long as width of basal tarsal joint.

Apterous: Similar in color to the apterous female but usually with less hypodermal pigment. Antennal segment III shaded with brown at apex, IV brown in apical half, yellow in basal; V yellow in basal third; VI-VIII brown.

Measurement of type. Total length 1.4 mm. Head, length .26 mm., width .21 mm.; prothorax, length .15 mm., width, including coxae, .37 mm.; pterothorax, width .33 mm.; abdomen, greatest width .37 mm.; tube, length .15 mm., width at base .09 mm., at apex .03 mm. Antennal segments, length (width): I, 47(46); II, 49(37); III, 70(33); IV, 65(35); V, 61(33); VI, 56(33); VII and VIII, 70(26) microns. Total antennal length .43 mm.

Nymphs. Pale straw yellow with much hypodermal pigment which is reddish brown by transmitted light, crimson by reflected light.

Described from three macropterous and thirteen apterous females, one macropterous and nine apterous males. Taken the year around from dead Spanish moss on ground, and alive, on trees, "dead leaves, pine needles, broom sedge (Andropogan) Trametes hydnoides. In Gadsden, Leon, Alachua, Volusia, and Putnam Counties, Fla.; Asheville, N. C., Birmingham, Alabama. (H. E. Bratley, Coll.)

Close to *Trichothrips anomocerus* Hood but separated by the capitate major bristles, the dark shadings on antennal segments

IV-VI, and the banded wings. It is unusual for apterous individuals of this genus to have ocelli.

Trachythrips watsoni Hood—var. **fairchildi** var. nov.

On December 27, 1934, Mr. G. B. Fairchild sent the writer a quantity of moulding leaves from Matheson Hammock in Dade County, Florida. From this material there was separated about fifty specimens of this (in Florida) rather common thysanoptera, all of which differ from the described species in the possession of an extra segment in the antennae, making the antennae 6-segmented (Fig. 3). The extra segment is evidently due to the cutting off of the base of segment III, or perhaps it would be phylogenetically more correct to say that the 5-segmented condition of *T. watsoni* is due to the coalescing of these two segments. In some other specimens of the species, especially a series collected by J. W. Kea on Stock Island, Monroe County, Florida, there is a shallow notch on the outside of the third segment, but in this series the division is complete. In all other characters these specimens agree with the species.

Described from 30 females and 18 males.

Two years later Fairchild collected from leaf mould in Annapolis, Goyaz, Brazil, three females which are very close to this same variety. In these the new segment is widely separated from the fourth and the brown color of the last segment appears on the 5th segment also.

Chirothripoides minutus n. sp.

Female: A very small insect, total length .65 mm., and very narrow as are all species of the genus. Thicker than wide so that it is difficult to mount with dorsal side up. Light straw yellow by transmitted light, gray by reflected. Thorax and abdomen with much hypodermal pigment, purple by transmitted light, bright yellow by reflected.

Head nearly 1.8 longer than wide. Widest directly behind the eyes from which point the cheeks are nearly straight and converging quite sharply posteriorly. Prolonged very little in front of the eyes. Eyes very large, occupying about three-sevenths of the length of the head and five-sixths of the width, leaving just space enough for the large ocelli with their dark red crescents. Postocular bristles long (47 microns) and pointed. Another bristle on the cheeks behind each eye is about half as long. All bristles of the body practically colorless. Mouth cone reaching the middle of the long prothorax, broadly rounded at the tip. Maxillary palpus 2-segmented. Antennae 8-segmented but the third very small and has the appearance of but a greatly expanded base of segment IV. Segments I-IV very pale yellow, I almost white in type but darker than II in paratypes, IV tinged with light brown in apical half; V-VIII (and in one paratype IV) light grayish brown, VIII long and slender, petioled, serrated on the upper side. Prothorax wider than long, sides slightly arched

and sharply diverging posteriorly, only .6 as wide along the anterior margin. A long (42 microns) pointed bristle at each anterior angle, and a pair of somewhat shorter ones at each posterior angle. Pterothorax somewhat wider than long. Legs short, fore pair concolorous with the body; middle and hind pair almost colorless. Fore coxae long, fore tarsus unarmed. Wings long and membrane typically narrow, that of the fore pair about 8 microns wide but expanded near the base to 24 microns. Base gray, but apically this shading confined to a small rectangular spot at the base of each hair. Posterior pair narrower and nearly colorless. Except in basal third each pair fringed with a few (about 30) very long hairs (163 microns).

Abdomen very long and slender. The typical long, heavy spines on the posterior margin of the 8th segment. Tube short, terminal bristles shorter than the tube.

Measurements (in microns) of type:—Head, length 82, greatest width (just behind eyes) 47; prothorax, length 67, width 79; pterothorax, width 82; abdomen, greatest width 77; tube, length 58, width at base 30, at apex 14. Antennal segments, length (width): I, 16(16); II, 23(18); III, 12(16); IV, 21(19); V, 23(16); VI, 14(14); VII, 12(9); VIII, 18(5). Total length 133.

Male. Total length .54 mm. Head, length (in microns) 81, greatest width (just behind eyes) 54; prothorax, length 59, width 59; pterothorax, width 75; abdomen, greatest width 70; tube, length 47, width at base 28, at apex 18.

Antennal segments, length (width): I, 16(16); II, 23(19); III, 12(14); IV, 23(23); V, 18(21); VI, 19(13); VII, 12(7); VIII, 16(5). Total length 133.

Abdomen narrow at base 23 microns, gradually widened to segments 7 and 8 and thence rounded to the tube. Color identical with female.

Described from four females and one male, one collected from dead leaves on ground in dense hammock April 4, 1937, Alachua County, Florida, one from live Spanish moss on a tree, Gainesville, Florida, March 28, 1937, one from dead leaves of *Tumion* on ground, banks of Apalachicola River, Florida, collected by Erdman West, April 20, 1937, and two from dead leaves from Annapolis, Goyaz, Brazil, collected August 27, 1936, by G. B. Fairchild.

This very interesting insect is the third of this genus and family to be described; *C. typicus* Bagnall from Trinidad, host not recorded, *C. dendropogonus* Watts from Spanish moss in S. C. The writer has a single specimen of what appears to be a fourth species from Brazil. The small size of this species will at once distinguish it from the others.

Trichothrips americana Hood

Frequently found on moulding leaves, among ferns, bromelids, and Spanish moss on live oak and other trees, on sedges; but

most characteristic of woody fungi including *Polystictus versicolor, Daedalia confragosa, Polyporus pargamenus, Ozonium aureum, Lycoperdon pyriforme, Auricularia auriculae-judae,* old rust galls on pine. Active the whole year in Florida, Alachua, Columbia, Lake, Marion, Escambia, St. Johns, and Okaloosa counties, Gatlinburg, Tenn. (dried grass), San Antonio, Texas (leaves in open oak woods).

Trichothrips augusticeps Hood

Also found among decaying leaves but like the last more common in woody fungi, *Daedalia unicolor, D. quercina, D. ambigua, Polyporus pargamenus, P. gilous, P. versicolor, Fomes fasciatus, Stereum hirsutum, S. lobatum, Favolus braziliensia, Chiodecton rubrocinctus, Pleurotus ostratus, Lactaria indigo.* (Fungi identified by Mr. Erdman West.)

INDEX TO THE FLORIDA ENTOMOLOGIST

An index to volumes 1 to 19 inclusive of the Florida Entomologist is now in preparation. This index contains a table of contents arranged by volumes and an index of the insects by specific and varietal names. This index is to be sold at 75c a copy. Orders should be sent to J. W. Wilson, Business Manager, Leesburg, Florida. Subsequent volumes will have an index in the last number of each volume.

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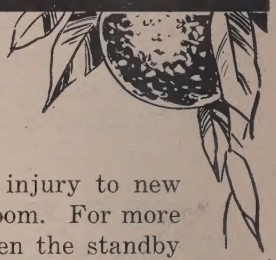

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